



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,254	08/24/2000	Byung Tack Kim	CHUNP0155US	8529

7590 12/17/2001

Don W Bulson Esq  
Renner Otto Boisselle & Sklar PLL  
1621 Euclid Ave  
19th Floor  
Cleveland, OH 44115

EXAMINER

LEE, BENNY T

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 12/17/2001

Please find below and/or attached an Office communication concerning this application or proceeding.



DEPARTMENT OF COMMERCE

Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

EXAMINER	
ART UNIT	PAPER NUMBER
5	
DATE MAILED:	

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined       Responsive to communication filed on \_\_\_\_\_  This action is made final.

A shortened statutory period for response to this action is set to expire 1 or 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

## Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1.  Notice of References Cited by Examiner, PTO-892.  
2.  Notice re Patent Drawing, PTO-948.  
3.  Notice of Art Cited by Applicant, PTO-1449  
4.  Notice of Informal Patent Application, Form PTO-152.  
5.  Information on How to Effect Drawing Changes, PTO-1474  
6.

## Part II SUMMARY OF ACTION

1.  Claims 1 - 17 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2.  Claims \_\_\_\_\_ have been cancelled.

3.  Claims \_\_\_\_\_ are allowed.

4.  Claims 1 - 10; 11, 17 are rejected.

5.  Claims \_\_\_\_\_ are objected to.

6.  Claims \_\_\_\_\_ are subject to restriction or election requirement.

7.  This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.

8.  Allowable subject matter having been indicated, formal drawings are required in response to this Office action.

9.  The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are:  acceptable;  
 not acceptable (see explanation).

10.  The  proposed drawing correction and/or the  proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been:  approved by the examiner.  disapproved by the examiner (see explanation).

11.  The proposed drawing correction, filed \_\_\_\_\_, has been  approved.  disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.

12.  Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has  been received  not been received  
 been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13.  Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1835 C.D. 11; 453 O.G. 213.

14.  Other

Art Unit: 2817

The disclosure is objected to because of the following informalities: Page 1, lines 22, 23, note that "toward compactness, smallness and lightness thereof" should be rephrased for clarity. Page 3, line 24, page 4, lines 4, 14, 15, note that --34-- should follow "2," such as to consistent with Fig. 2. Page 5, line 7, note that --of Fig. 1-- should follow "filter" for clarity. Page 14, lines 11, 12, 17, 19, note that the use of the prefix "Z" or "I" prior to respective capacitance parameters is vague in meaning. Page 15, line 19, note that "the drawing" should be rewritten as -- Figure 3--. Page 17, line 14, note that "101" appears that it should correctly be --201--. Page 18, line 7, note that --(see Fig. 6A)-- should follow "altered"; line 9, note that -- in Fig. 6A-- should fellow "embodiment" for clarity.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: The following reference labels need to be explicitly described with respect to the corresponding description of the Figures in which they appear: Fig. 1 (14a, 14b, 14c); figs. 2, 6B (transmission/reception area); fig 2 (Antenna); fig. 3 (114 a, 114b); fig. 4A, all reference labels except (203, 209); fig. 5B, in it's entirety; fig. 6A, all reference labels except (301, 303, 307); all reference labels except (R' 12).

Appropriate correction is required.

The drawings are objected to because of the following: In fig. 3, should the central reference label "114b" correctly be --114c--?; In fig. 4B, note that the rightmost reference label "210" should correctly be --201--.

Fg. 4B      310 → - 301 - 2

Art Unit: 2817

Claims 1-10; 11; 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claims 1, 8, 9, 12, for each “filtering area”, note that the recitation of “resonating hole” (and features thereof), the relationship therebetween needs clarification (i.e. same hole for each filtering area?; different hole in each area?; etc).

In claims 1, 6-11, note that it is unclear which one of the “at least one resonator” is intended by the respectively recited “the/said resonator”.

In claim 6, note that it is unclear how “two or more resonators” relates to the earlier recited “at least one resonator”. Similarly, it is unclear how “a plurality of first open areas” relates to the earlier recited single “first open area” (e.g. a part thereof, separate therefrom, etc).

The following claims have been found objectionable for reasons set forth below:

In claims 1, 12, note that “its internal surface “should be rephrased as --the internal surface thereof-- for a better characterization.

In claims 1, 2, 6, 7, 8, 11, 12, note that “formed” should be rewritten as--disposed-- at each occurrence.

In claim 11, note that “their internal surfaces” should be rephrased as --internal surfaces thereof--at each occurrence for a better characterization. Note that “thus forming” should be rephrased as -- thus defining -- for a better characterization.

Art Unit: 2817

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4; 11; 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sokola.

Solola (fig. 3) discloses a duplexer dielectric filter (10) comprising a dielectric block having a series of resonators (14, 15, 16) disposed within the dielectric block. Note that the resonators are arranged into a receive filter section and a transmit filter section which are respectively connected to a radio receiver and a radio transmitter via corresponding electrodes (20, 18) on a side surface of the dielectric block. Moreover, note that a common antenna is connect to the resonators of the filter via an electrode (19) on the side surface of the dielectric block. The dielectric block is substantially coated with a conductive layer except for an area (S3) on the side surface which affect the coupling to and between the resonators (14, 16, 18). Furthermore, coupling electrodes (18, 19, 20) are also commonly disposed in this uncoated region (S3) such that a portion of area (S3) is in the receive portion of the filter. Finally, altering the amount of metalization affects the bandwidth and loading of the resonators (e.g. see col 3, ls 8-32).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2817

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sokola.

Although the duplexer of Solola discloses three resonators therein, note that col 5, ls 1-4 suggests that alternative embodiments may include “three or more ...[resonator] holes”.

Accordingly, in view of the above cited suggestions, it would have been obvious to have alternatively realized that one portion (i.e. receive or transmit) with two or more resonators therein.

Claims 1-10; 11; 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zakman in view of McVeety et al.

Zakman (fig. 3) comprising discloses the configuration of a dielectric block duplexer comprising resonators (304, 308, 312, 316; 320, 324, 328, 332, 336) configured as transmit and receive filter portions. As is evident from fig. 4 transmit/receive electrodes (376, 384) and

Art Unit: 2817

antenna electrode (392) are disposed on a side surface of the dielectric block and are electrically isolated from the metallization on surface (290) by respective unmetallized areas. However, Zakman differs from the claimed invention in that it lacks an unmetallized area on the side surface of the dielectric block to affect coupling and loading of the resonators.

McVeety et al (fig. 1) discloses a dielectric block filter having an unmetallized area (32) to affect the coupling of the resonators. Moreover, as is evident from figs. 6 and 9, the unmetallized area (604; 904) includes a respective conductive pad (602; 902) therein. Note that the dimensions of the conductive pad can be varied to affect the response characteristic of the filter (e.g. see col. 5, line 46 to col. 6, line 26). Also as is evident from fig. 12, the unmetallized area (120) can also encompass input/output electrodes (124, 126).

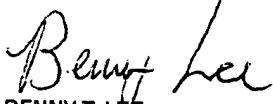
Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the dielectric block duplexer of Zakman to have included an unmetallized portion of the side surface to affect the coupling of the resonators such as taught by McVeety et al. Such a modification would have been obvious since it would have imparted to the Zakman dielectric block duplexer the advantageous benefits of such a unmetallized portion (i.e. providing of adjustment in the resonator couplings), thereby suggesting the obviousness of such a modification. As a consequence of such a modification, obviously unmetallized portions such as in figs. 1, 6, 9, 12 of McVeety et al would have been appropriate one(s) of the transmit and receive portions (e.g. in the receive portion).

Art Unit: 2817

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee et al and Hino disclose unmetallized portions on the side surface of a dielectric block filter.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number (703) 308-4902.

Lee/nt

  
BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817

12-14-01